DOCUMENT RESUME

ED 090 265 TM 003 540

AUTHOR Radocy, Rudolf E.
TITLE Quantification of Affective Behavior.
PUB DATE Apr 74
NOTE 4p.; Paper presented at the National Council on Measurement in Education (Chicago, Illinois, April 18, 1974)

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS *Affective Behavior; *Affective Tests; Measurement Techniques; *Test Construction; *Testing Problems

ABSTRACT

A need for measurement exists not only in academic events but also in the affective domain. The author presents a procedure for quantification of affective behavior. The procedure contains three stages. One is the conceptualization stage in which personal meanings of elements in the affective domain are examined. Another is the crucial operationalization stage in which decisions are made regarding what events will be accepted as evidence of desirable affective behavior. The other stage is the placement of numbers on the events. They may be categorized, ranked, or placed at equal intervals. If behavioral objectives are to be more than cognitive, then those responsible for educational measurement in a specific situation must work together in the conceptualization and operationalization stages. The author concludes that quantification of affective behavior is not a problem of measurement theory, but rather a problem of human negotiation. (Author/BB)

ED 090265

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Quantification of Affective Behavior

Rudolf E. Radocy

The University of Kansas

presented as part of the
Symposium on Educational Measurement in the Affective Domain

National Council on Measurement in Education

Chicago

April 18, 1974

Educational measurement requires the attachment of numeric identity to the phenomena being measured. Stevens (1951) in his classic quote says, "In its broadest sense, measurement is the assignment of numerals to objects or events according to rules [p. 1]." The need for such assignment exists not only for academic events but also for those events, such as expressed pupil attitudes, feelings, and values, which customarily are classified as affective rather than cognitive. Because affective phenomena may be unobservable, which provides a paradox known as "nonobservable behaviors," the attachment of numbers to affective behavior is complicated by the question of what should be measured. Generation of a distribution of "nonobservable" events, to which we can apply our measurement principles and theories, is required. In today's brief presentation, I suggest that quantification of affective behavior is less of a measurement problem than it is a human problem.

The question of what should be measured is deceptive and difficult. Everyone "knows" what is meant by values, beliefs, feelings, attitudes, and appreciation. Yet we experience difficulty in discussing such concepts because, I think, we disagree regarding how they should be manifested in observable behavior. I doubt that offering definitions would be a profitable endeavor; we always can consult the dictionary. What is needed is a process for implementing a quantification procedure in diverse educational settings. I propose that a conceptualization and an operationalization stage are necessary, and that we must become less conservative and more imaginative in our attempts to quantify the seemingly nonquantifiable.

The person responsible for planning educational measurement in the affective domain, whether teacher or consultant, requires some conceptualization of that which is to be measured. What is a value? What is one's personal concept of a value? What is appreciation? What is one's personal concept of appreciation?

Let us consider an example. Arts educators are concerned with more than acquisition of technical skills and facutal knowledge of art works and their performers and creators. The building of positive values for and attitudes toward diverse styles of music, the visual arts, dance, and drama is a major goal of arts education. Measurement of pupil values and attitudes regarding the arts will be enhanced if the measurement person has some personal concept of what such values are attitudes might mean. This can be gained from reading relevant literature as well as discussing with arts educators how they value and feel about the arts. It can be very illuminating to study a musician's excitement at hearing what he or she considers to be an unusually beautiful tone or a painter's excitement at perceiving an unusual mixture of colors. In gross terms, I am calling for development of a personal conceptualization of relevant affective behavior through experience.

After the person responsible for measurement believes that the relevant concepts of affective behavior are sufficiently established, the process becomes one of operationalization. What is a value? What does one's personal concept of a value require as evidence of valuing? What is appreciation? What does one's personal concept of appreciation require as evidence of appreciating? In short, how should one's concept be manifested in another individual?

It is crucial in a particular measurement situation to state or at least imply operational definitions for those events which are the subject of measurement. Such definitions are by no means limited to the affective domain; consider such a cognitive skill as the ability to add and subtract numbers. How does one know that a student is able to add and subtract? By observing the student add and subtract numbers of the required complexity in various situations. Similarly, how does one know that a student has a certain attitude toward a particular musical composition? By observing the student's reactions, physical and psychological, to that composition and what the student tells others about the composition. The major point is that the person responsible for the measurement procedure must state what is acceptable evidence of a desired condition.

Let us reconsider the arts education example. If one assumes that a desirable educational goal is that a high school student who is not a performing musician nevertheless values music in his or her life, what are some ways in which such a value might manifest itself? The student could spend money to build a personal record collection. Chores and study may be accompanied by background music. Friendships may be cultivated with musicians. Membership may be sought in a club organized around musical interests. Out-of-school concert attendance may increase. In academic subject areas, papers and projects related to music may be submitted. There are many observational problems, and some home situations prevent many of the suggested manifestations, but a consistent voluntary seeking of music indicates some value for music. Furthermore, such seeking may be observed and counted.

What about the non-cognitive educational goal of "building worthy citizens?" Such a goal may be ridiculed, but perhaps there is something, in a democracy, to worthy citizenship. Some teachers may protest that "worthy citizenship" is never evident until years after the conclusion of formal schooling. However, are there not some indications of a concept of "worthy citizenship" which may be observed in and around the school setting? What does the student make of opportunities to participate in student government? In a conversation about a relevant topic, what reference does the student make to such things as honesty, fair play, and prejudice? In an open-ended discussion of some news event, does the student talk independently or merely mimic others? How much non-compulsory newspaper reading and television news viewing is done? Again, any one piece of evidence is subject to economic bias, institutional constraints, and possible faking, but is there not an opportunity to establish a pattern of behavioral manifestations of underlying values or attitudes characteristic of a worthy citizenship concept?

I suggest that a large amount of difficulty experienced in the quantification of affective behavior is due to overcaution and lack of imagination on the part of those responsible for measurement. The Webb et al. (1966) publication with its many clever schemes for unobtrusive measures perhaps needs reexamination. We must conceive of numerous events which have in common the possible manifestation of a desirable affective state. Such events may be counted; they generate distributions to which familiar rules, qualifications, and analytical procedures may be applied.

There is danger, of course, in equating just one type of behavioral manifestation with sufficient indication of desirable affective learning. Certainly, the purchase of recordings is not a sufficient indication of a value for music. Independent commentary regarding political figures is not a sufficient indication of worthy citizenship. Judgments regarding the degree of appreciation, value, or interest represented by a particular observable went are subject ot unreliability. Nevertheless, we should not hesitate to extend our data bases or look beyond the obvious.

The procedure for quantification of affective behavior which I suggest, then, has three stages: One is the conceptualization stage in which personal meanings of elements in the affective domain are examined. Another is the crucial operationalization stage, in which decisions are made regarding what events will be accepted as evidence of desirable affective behavior. The other stage is the placement of numbers on the events. They may be categorized, ranked, or placed at equal intervals.

If teachers are to be convinced of the importance of affective behavior in its own right, if behavioral objectives are to be more than cognitive, those responsible for educational measurement in a specific situation must work together in the conceptualization and operationalization stages. The quantification of affective behavior is not a problem of measurement theory at all. It is simply a problem of human negotiation.

References

Stevens, S. S. Mathematics, measurement, and psychophysics. In S. S. Stevens (Ed.), Handbook of Experimental Psychology. New York: Wiley, 1951.

Webb, E. J., Campbell, D. T., Schwartz, R. D., and Sechrest, L. Unobtrusive measures: Nonreactive research in the social sciences. Chicago: Rand McNally, 1966.